

106. Conventional implicature and expressive content

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Abstract

This article presents evidence that individual words and phrases can contribute multiple independent pieces of meaning simultaneously. Such multidimensionality is a unifying theme of the literature on conventional implicatures and expressives. I use phenomena from discourse, semantic composition, and morphosyntax to detect and explore various dimensions of meaning. I also argue that, while the meanings involved are semantically independent, they interact pragmatically to reduce underspecification and fuel pragmatic enrichment. In this article, the central case studies are appositives like *Falk, the CEO*, and the taboo intensive *damn*, though discourse particles and connectives like *but*, *even*, and *still* play supporting roles. The primary evidence, both quantitative and qualitative, is drawn from large interview and product-review corpora, which harbor a wealth of information about the importance of these items to discourse.

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1 Introduction

Natural language meanings are multifaceted. Even the simplest words, phrases, and sentences can, when uttered, convey a variety of distinct messages. Some derive solely from the conventions of language, others from rich interactions between language and context. Important examples include presuppositions, conversational implicatures, conventional implicatures, connotations, and at-issue (truth-conditional, entailed) content, as well as blends of these. Many of the central issues of semantic and pragmatic theory revolve around how to manage this complex network of interdependent meanings.

The present article focuses on secondary meanings that (i) derive from the conventions of language, albeit with extreme context dependency in many cases, and (ii) are semantically separate from the at-issue content but interact with it pragmatically. Appositives and expressives typify this multidimensionality:

- (1) a. Charlie, *an infamous axe murderer*, is at the door!
- b. Charlie is at the door.
- (2) a. The *damn* dog is on the couch.
- b. The dog is on the couch.

These sentences are information-rich even without contextualization; if uttered, they convey even more. My focus is on the meanings that we can trace, in whole or in part, to the highlighted (italicized) elements.

For example, both (1a) and (1b) convey that Charlie is at the door. However, the appositive in (1a) contributes a second meaning, by ascribing the property of being an infamous axe murderer to Charlie. These two meanings are, in a sense to be made clear below, independent of one another, but they interact pragmatically. In this case, each

supports the other's relevance to guide us towards the speaker's intended message. The interaction is quite different if we replace this appositive clause with *the pizza delivery guy*. Thus, we'd like a semantic theory that allows this sentence to denote two propositions, and we'd like a pragmatic theory that explains how those propositions interact to produce a pragmatically-enriched message.

Something similar happens in (2). Whereas (2b) can be a neutral report, (2a) encodes charged information about the speaker's emotional state. The nature of this contribution is context dependent and challenging to specify, but it nonetheless leaps out, helping us to understand why the speaker is offering the content of (2b) at this point in the conversation. Once again, we have semantic independence — we can identify (2b) in (2a), both semantically and morphosyntactically — and once again we have rich pragmatic interactions between the two meanings.

Grice (1975) sketched the notion of conventional implicature (CI) for roughly this class of phenomena, and Bach (1999), Neale (1999), and Horn (2007) find the seeds of that classification in Frege's writings. Both Frege and Grice used expressions like these to probe the limits of their theories of meaning. Ever since, the study of CIs has branched off in numerous directions. The resulting picture appears fragmented; as Horn (2007) says, CIs have had "a long and sometimes difficult history" (p. 39). I've argued, though, that multidimensionality of the sort seen in (1)–(2) unites this research (Potts 2007b). Here, I argue for a unifying pragmatic concept as well: CI items are primarily devices for situating the main clause in the web of information that comprises the discourse. This seems a fitting characterization not only of the above examples, but also of items more standardly regarded as contributing CIs, as in (3)–(5).

- (3) Alfie is a baby, *but* he is quiet.
- a. At-issue = Alfie is a baby, and he is quiet
 - b. CI \approx Babies are not usually quiet
- (4) Isak is *still* swimming.
- a. At-issue = Isak is swimming
 - b. CI \approx Isak was swimming earlier

- (5) *Even* Bart passed the test.
- a. At-issue = Bart passed the test
 - b. CI \approx Bart was among the least likely to pass

The CI paraphrases are very rough, as indicated by the approximation signs. A recurrent theme of CI meanings is that they are hard to specify in propositional terms. I return to this in section 3.

In the next section, I take a closer look at the semantic multidimensionality of these examples, providing diagnostics for identifying secondary dimensions of meaning and isolating them compositionally and pragmatically. Following that, I address how CIs feed pragmatic enrichment. The overall picture reconciles the lexical and constructional origins of CIs with the usual assumption that they belong, in some sense, to pragmatics.

2 Dimensions of meaning

Grice (1975) calls upon multiple dimensions of meaning to resolve conflicting intuitions about speaker commitments. The definition proceeds by way of example:

If I say (smugly), *He is an Englishman; he is, therefore, brave*, I have certainly committed myself, by virtue of the meaning of my words, to its being the case that his being brave is a consequence of (follows from) his being an Englishman. But while I have said that he is an Englishman and said that he is brave, I do not want to say that I have *said* (in the favored sense) that it follows from his being an Englishman that he is brave, though I have certainly indicated, and so implicated, that this is so.

On Grice's proposal, the conventional implicature is the proposition denoted by 'its being the case that his being brave is a consequence of (follows from) his being an Englishman', and the at-issue content ('what is said') is the proposition denoted by the conjunction 'he is an Englishman and brave'. One sentence, two propositions. One might dispute whether Grice's analysis of *therefore* is correct, but the logical and linguistic idea is compelling.

Karttunen & Peters (1979) brought this idea to life by fitting it into a standard model-theoretic package. The essence of their idea is captured by the four truth-value combinations in (6).

- (6) $\langle T, T \rangle$ $\langle F, T \rangle$
 $\langle T, F \rangle$ $\langle F, F \rangle$

Suppose we treat the first value in each pair as modeling at-issue content and the second as modeling CI content. Then we have a nuanced system that includes absolute truth (upper left), absolute falsity (lower right) and blends of the two with an intermediate status. Appositives provide an easy illustration of the promise of this idea:

- (7) Falk, the CEO of Acme Products, gave the keynote address.

Here, we have two propositions expressed. Let's connect them with the meaning tuples in (6) by assuming that the at-issue dimension (that Falk gave the keynote address) is the first coordinate, with the appositive content (that Falk is the CEO of Acme) given by the second coordinate. If both propositions are true, the value is $\langle T, T \rangle$. If Falk merely consults for Acme, but he did give the keynote, then the value is $\langle T, F \rangle$. And so forth. This seems to be very close to Grice's (1975) original proposal; the quotation at the start of this section continues with its analysis of *therefore* by saying, "I do not want to say that my utterance of this sentence would be, *strictly speaking*, false should the consequence in question fail to hold." Presumably, it wouldn't be, *strictly speaking*, true in this situation either: $\langle T, F \rangle$.

There is no reason to limit ourselves to truth values when dealing with multiple dimensions of meaning. We certainly want to enrich the coordinates to be propositional, for example. If W is the space of possible worlds, then this gives us all the meanings in $\wp(W) \times \wp(W)$ to work with. However, if appositives are to be a test case, then mere pairs won't suffice. A single sentence could have multiple appositives hanging off of it, each contributing in its own way. This might lead us to conclude that the meaning space is $\wp(W)^n$, the set of all n -tuples of propositions, again with the first member corresponding to the at-issue content and

the rest corresponding to secondary meanings of whatever kind we discover.

However, the phenomena in question are compositional: they trace to particular words and constructions. This is central to Karttunen & Peters' theory. For them, not only sentences, but also individual words and phrases, can have multidimensional meanings. Pursuing this idea, we can identify *Falk, the CEO of Acme Products* as a phrase that has two meaning components. Its first dimension picks out Falk, and is thus indistinguishable from the unadorned proper name *Falk*. Its second dimension is the proposition that Falk is the CEO of Acme Products. Since appositives can affix to sentences (*It's raining, which is unexpected*), verb phrases (*Joan jogs, which Jed does too*), and a host of other constituents, it looks like the space of meanings is at least as broad as $M \times \wp(W)^n$, the set of all pairs in which the first coordinate is a member of the set M of all meanings (whatever that space is like) and the rest of the coordinates are propositional.

I think we want to generalize even more than that to deal with expressive content. Here is Kaplan (1999) drawing a distinction that bears a family resemblance to Grice's above, but that more directly links semantics and pragmatics:

When I think about my own understanding of the words and phrases of my native language, I find that in some cases I am inclined to say that I know what they *mean*, and in other cases it seems more natural to say that I know how to *use* them.

Kaplan goes on to define *descriptive correctness* and *expressive correctness*, two very different measures of a sentence's status when uttered in context. The two are independent. If I utter *The damn dog is on the couch*, my utterance is descriptively incorrect if I'm wrong in my claim about the dog, but it's expressively correct if my emotions are heightened in the way that *damn* indicates. Conversely, my utterance is descriptively correct if I am right about the dog, but it is expressively incorrect if I am, for example, simply confused about the use conditions of this item and thus send an inaccurate or unintended signal about my

emotional state. We can reconnect with [Karttunen & Peters' \(1979\)](#) semantic multidimensionality by treating sentences as denoting n -tuples of meanings, where our notion of meaning is left broad enough to encompass not only the propositional stuff of appositives but also the more elusive emotionality of expressives.

The above very general logical ideas form the backbone of this article. I introduce them first largely to shift the emphasis off of what I or others believe about how to define 'conventional implicature' and 'expressive', or how to interpret others' definitions of these terms. Instead, I'd like to focus on the formal and empirical issues that arise when we move to a theory in which individual words and phrases denote n -tuples of meanings. There is a great deal of space, in such a setting, for new empirical investigation and formal innovation. I turn now to the task of identifying dimensions of meaning, using phenomena from discourse (section 2.1), semantic composition (section 2.2), and morphosyntax (section 2.3).

2.1 Dimensions in discourse

In the previous section, I used truth-value judgments to acquaint us with the idea that some sentences denote tuples of meanings. If these values are truly independent, then we should expect to see the effects in discourse as well. The present section reviews evidence that this is what we find.

Let's start with simple, straightforward denials, again using appositives as a test case. In (8), from the Larry King Live TV show (August 9, 2005), King is finishing his show by passing control of the airwaves to Aaron Brown. Brown disputes just the appositive relative's content; the at-issue content concerns an uncontroversial fact about the network's schedule.

- (8) King: Right now, it's time to turn it over to our man in New York, the host of "NEWS-NIGHT," Aaron Brown, who carries on, as all great newsmen do, in that great tradition of, the show must go on.

Brown: No, that's what show business people do. [...] That's what you do. I do something else.

We also, of course, find cases in which the target of a denial is just the at-issue content of the preceding utterance, with the appositive left unaddressed. This is the dynamic in the following exchange from the TV show *The Situation Room* (September 26, 2008):

- (9) Blitzer: You're with the House Republicans, who say you know what, not so fast.

Dobbs: No, no, no, no, no. I'm with the American people [...]

In both (8)–(9), the first statement is semantically multidimensional, and the reply exploits this fact.

Assent and denial are not the only phenomena that can tease meaning dimensions apart. In the following Switchboard corpus ([Godfrey & Holliman 1993](#)) exchange, for example, Speaker A55 acknowledges the truth of the at-issue content of Speaker B54's assertion but queries the appositive content:

- (10) Speaker B54: Actually I just, put a, uh, little fence around my yard, uh, um, which is I suppose, technically illegal, but I had so many groundhogs last year that I think they'll let me get by with it, and it, it's got this one inch mesh and what I've noticed it's kept the cats out and I love it.

Speaker A55: Um, yeah, yeah, because they, they like to get in and fertilize things too. But, uh, why would it be illegal?

The reverse — querying the at-issue content while accepting the appositive content — is also robustly attested in naturally-occurring dialogue.

It is easy to accumulate additional evidence for the multidimensionality of appositive-containing sentences. For example, sometimes the appositive and at-issue dimensions fuel different speech acts (e.g., *Is Sam, who was in the hospital recently, feeling well enough to attend?*), and they can host distinct speech-act modifiers (e.g., *Please visit Sam, who could, quite frankly, use some cheering up!*). For further discussion, data, and references see [Potts 2005:§4](#) and [Horn 2007](#).

I think the situation does not differ in kind for other CI and expressive items, though many of

them contribute in ways that are harder to characterize precisely, which makes them inherently less open to negotiation in dialogue and which can lead to what Horn (2002) calls *assertoric inertia*. However, there are some identifiable techniques for accessing even these more ineffable dimensions. For example, all of the phrases in (11) are robustly attested on the Internet. (Examples marked with ‘G’ were found using Google.)

- (11) a. *But?* What do you mean, *But?* [G]
 b. *Again?* What do you mean, *Again?* [G]
 c. *Still?* What do you mean, *Still?* [G]
 d. *Even?* What do you mean, *Even?* [G]

More generally, the template *W? What do you mean W?* (i) highlights an element *W* that arguably makes multiple meaning contributions, (ii) homes in on the non-at-issue part of that meaning, and (iii) challenges it. This resembles the ‘Hey, wait a minute!’ strategy discussed by Shanon 1976 and von Stechow (2001) in the context of identifying and negotiating presuppositions. Example (12), from a CNN interview between Anderson Cooper and As’ad AbuKhalil (May 14, 2003), illustrates with a very clear case of presupposition-challenging, tracing ultimately to the presuppositions of *make* in the intended sense.

- (12) AbuKhalil: Well, it’s an extremely organized party. And I worry that we may inevitably or willingly make them an enemy of the United States. I did an interview with (CROSSTALK)

Cooper: Wait a minute. Wait a minute. You’re saying they’re not an enemy of the United States already?

This strategy is also widely used for other kinds of non-at-issue meaning. In (13), for example, basketball coach Bobby Knight recounts an incident in which he hurled a chair onto the court. King calls him on the surprise conversational implicature that the outburst was merely a performance (Larry King Live, March 26, 2001).

- (13) Knight: Yeah. Somebody said, you know, you are really good actor, and — like the chair, I didn’t hit anybody with the chair, pretty good aim, I thought.

King: Wait a minute! Are you telling me you knew what you were doing there?

Thus, the ‘Hey, wait a minute’ test is useful for identifying a wide range of non-at-issue meanings, especially those that are difficult to articulate and thus difficult to unambiguously query or challenge.

Expressive content is the most reticent of all. It is common for speakers to call upon the ‘Hey, wait a minute!’ strategy to object to the appropriateness of another speaker’s swears, honorifics, and exclamations. This is effective, but it is limiting from an analytic standpoint, since it is rarely clear which aspects of the meaning are being challenged. It makes sense, then, to turn to subsentential discourse phenomena, where questions about what is asserted and what is accepted are less pressing. Ellipsis is especially useful here (article 78 *Ellipsis*). Example (14) shows that verb-phrase ellipsis can reuse an expressive-laden phrase without thereby incorporating the expressivity (Potts et al. 2007):

- (14) Speaker A: I saw your fucking dog in the park.
 Speaker B: No, you didn’t. You couldn’t have. The poor thing passed away last week.

In using the strong expressive *fucking*, Speaker A evinces hostility towards Speaker B’s dog. Speaker B reuses the verb phrase *see your fucking dog in the park*, but clearly without the expressive coloring. Although indexicals easily shift under ellipsis (Fiengo & May 1994; article 68 *Indexicality and logophoricity*), as we see with the pronoun *you* in this example, the expressive does not shift for B’s utterance. Rather, it is simply factored out. Multidimensionality provides a straightforward analysis of this case: Speaker A’s verb phrase denotes a pair consisting of (i) the property of seeing B’s dog in the park, and (ii) the expressive associated with *fucking*. Speaker B’s ellipsis reuses only (i).

2.2 Dimensions in semantic composition

In the previous section, I argued that individual meaning dimensions can lead different lives in

discourse. The present section shows that this multidimensionality is felt throughout semantic composition as well. Indeed, the case for dimensions of meaning is even easier to make at the sub-sentential level; once we move to the discourse level, there is a tendency for all discourse meanings to enter the swirl of the common ground.

Karttunen's (1973) presupposition holes are a straightforward place to start this investigation. The standard holes are negation, modalization, conditionalization, and questioning (article 102 *Presupposition*). They are united in the following sense: if a hole H combines semantically with an at-issue proposition p , then the result of that combination, Hp , does not entail p . For example, let's suppose that p is the proposition expressed by the sentence in (15a). If this is left unembedded, it yields a commitment to p when uttered. However, if embedded as in (15b–e), this commitment disappears.

- (15) a. Sam fed the dog.
 b. Sam didn't feed the dog.
 c. We don't have to stop by the house if Sam fed the dog.
 d. Sam might feed the dog.
 e. Did Sam feed the dog?

The presupposition holes earn their name because they do not have these expected modulating effects on *presuppositions* that are expressed by constituents in their scope. This is evident already in (15): the basic example (15a) presupposes the existence of a unique, salient dog, in virtue of the phrase *the dog*. Thus, let's say that the content of (15a) is better given by p_q , where q is the proposition that there is a unique, salient dog. Evidently, the values of $\neg p_q$, $(p_q \rightarrow r)$, *might*(p_q), and $?p_q$ all still have q as a commitment; the presupposition slips past all these operators.

All the meanings discussed in the previous section — appositives, expressives, particles, and so forth — uniformly project out of hole environments, with embedded interpretations typically requiring special discourse conditions or special intonational tunes (Boër & Lycan 1976; Horn 1989). In (16), for example, Pelosi's answer does not target the content of King's appositive; the two

are discussing Pelosi's public criticism of the Bush administration's handling of the Iraq War, which Pelosi goes on to defend (Larry King Live, February 27, 2007).

- (16) King: And you don't think at all they have a point when they say you and others like you, who speak out forcefully against it, help al Qaeda?

Pelosi: No.

Thus, despite being embedded in an interrogative, the appositive itself becomes a commitment of King's (admittedly somewhat biased) question. Conditional antecedents like (17), from the Switchboard corpus, also make the point. Here, if the appositive were interpreted as part of the antecedent, then the antecedent as a whole would be semantically contradictory, which is clearly not the speaker's intent.

- (17) I think it would concern me even more if I had children, which I don't, [...]

Karttunen's *plugs* are less uniform in their handling of these meanings. The plugs are non-factive attitude predicates (article 66 *Propositional attitudes*), and perhaps also tense operators. Plugs contrast with holes in that they typically do force presuppositions to be interpreted in their scope: if P is a plug and p_q is the meaning of a presupposition-laden sentence, then Pp_q typically does not presuppose q .

In the case of appositives, projection out of plug environments is routine. Example (18), from the widely available 20_newsgroups corpus, is a clear illustration, here centering around the non-factive attitude predicate *report*.

- (18) ESPN reported on Sunday, April 11, that the Lightning, who have been playing in 10,400-seat Expo Hall, are exploring opportunities to move to either Atlanta or Minneapolis. But Esposito [Lightning general manager —CP] said there was no truth to the report.

The sentential complement of *report*, the constituent we would expect to determine the content of the report, is the clause *the Lightning, who*

have been playing in 10,400-seat Expo Hall, are exploring opportunities to move to either Atlanta or Minneapolis. This contains the appositive. Yet it is evident from the second sentence that the appositive content must be factored out — it is not part of the argument to *report*, despite its syntactic position.

We expect the embedded constituent to denote the pair of propositions in (19). The first is modified by *report*, whereas the second goes on to become an unqualified discourse-level commitment in this case.

- (19) a. The Lightning are exploring opportunities to move to either Atlanta or Minneapolis
 b. The Lightning have been playing in 10,400-seat Expo Hall

Thus, this example indicates that it needs to be possible for the two dimensions to interact differently with plugs. Similar behavior is widely attested for expressives. In (20), for example, the complaint in question was written by the lawyers for “the idiot”; the attitude that this referential device conveys is clearly that of the author, not part of what the complaint says.

- (20) The complaint says that the idiot filled in a box labeled “default CPC bid” but left blank the box labeled “content CPC bid (optional)”. [G]

These examples show that appositives and other CIs *can* be interpreted outside of syntactically embedding holes and plugs. Whether they *must* be interpreted in this way is controversial. The issues surrounding expressives nicely illustrate the general empirical and theoretical issues that complicate things. Amaral et al. (2007) present examples like (21) as evidence that some expressives do receive embedded readings.

- (21) [Context: We know that Bob loves to do yard work and is very proud of his lawn, but also that he has a son Monty who hates to do yard chores. So Bob could say (perhaps in response to his partner’s suggestion that Monty be asked to mow the lawn while he is away on business):]

Well, in fact Monty said to me this very morning that he hates to mow the friggin’ lawn.

However, Potts (2007a) argues that examples like this do not involve true embedding, but rather an independently attested form of perspective shifting that is not tied to syntactic configurations or semantic binding and that is closely connected with discourse-bound logophoric reflexives (Kuno 1987; Buring 2005). Such shifting is facilitated by embedded attitude predications (they supply a salient perspective), but it is not dependent upon it. Example (22) illustrates well. The text, from the July 1995 issue of Harper’s Magazine, is by Lewis Lapham, the populist author and editor. The adjective *idiotic* used in the final sentence is not one that Lapham would endorse himself. Rather, he means to connect it with the group he characterizes in the preceding sentence. The perspective involved in this expressive modifier (indeed, in the entire rhetorical question) is thus shifted, not via interaction with other parts of the sentence, but rather as a matter of pragmatics.

- (22) I was struck by the willingness of almost everybody in the room — the senators as eagerly as the witnesses — to exchange their civil liberties for an illusory state of perfect security. They seemed to think that democracy was just a fancy word for corporate capitalism, and that the society would be a lot better off if it stopped its futile and unremunerative dithering about constitutional rights. Why humor people, especially poor people, by listening to their idiotic theories of social justice?

For further discussion of these issues, as they relate not only to expressives, but also to appositives and other CI items, see Schlenker 2003; Potts 2005, 2007a; Wang et al. 2005; Amaral et al. 2007.

For the more typical CI items exemplified in (3)–(5) above, the facts pertaining to presupposition plugs are clearer: they generally take scope inside plug environments. The most extended, detailed case for this position is due to Bach (1999), whose Indirect Quotation (IQ) Test is designed

specifically to see where and how items like *but* take scope with respect to plugs. Bach's central examples have the form of (23).

- (23) Marv: Shaq is huge and agile.
- a. Marv said that Shaq is huge but agile.
 - b. Marv said that Shaq is huge and agile

The IQ Test concerns what it takes to give a complete and accurate indirect report of Marv's utterance (23). If the contrastive non-at-issue meaning of *but* could take scope out of an embedded speech report, then we might expect (23a) to be fine. However, (23a) seems to imbue Marv's claim with extra content not evident in his original utterance. While Marv might endorse such content, it seems not to be conveyed by (23) alone. Thus, the IQ Test suggests that *but* is plugged by *say*. We can also work in the reverse direction: if Marv had uttered (24), then (23a) would satisfy the demand for a complete paraphrase, because we could freely interpret all aspects of *but*'s content inside the attitude predicate.

- (24) Marv: Shaq is huge but agile.

The projection of meaning from hole and plug environments remains an active area of research. As new lexical items are found and explored, the picture grows ever more complex. In my view, facts like the above suggest that projection patterns are highly lexical and subject to many pragmatic influences. The best strategy, then, seems to be to approach each item with an open mind about how it will project, rather than assuming that an existing classification of it (as a presupposition trigger, CI item, discourse particle, etc.) will determine its meaning contribution in complex sentences. The main conclusion of this section is therefore quite general: multidimensional phenomena provide a window into the semantic composition process, and they also pose deep challenges for how to characterize that process.

2.3 Morphosyntactic parochialism

Testing with presupposition holes, plugs, and other complex semantic operators often involves delicate judgments about scope and discourse commitments. Modern semantic theories hew

tight to the morphosyntax (Partee 1984; Barker & Jacobson 2007; articles 6 *Compositionality* and 97 *Constructional meaning*), though, so we expect those phenomena to correlate with generalizations concerning forms. This section describes some instances in which meaning dimensions rise to the surface in this way. The general result is that many natural language meanings operate only internal to their own meaning dimensions.

A simple first example is provided by *both*, which modifies only binary coordinated phrases:

- (25) a. *Jed lamented both that it was raining.
 b. Jed lamented both that it was raining and that the weather report had been wrong.

If an appositive is affixed to a sentence, the result denotes a pair of propositions, so we might expect *both* to combine with such sentences. This is not the case, though:

- (26) Jed lamented (*both) that it was raining, which the weather report had gotten wrong.

Example (26) involves a sentential appositive relative clause, adjoined sentence-finally so that it looks superficially very much like a coordinate structure. However, as far as *both* is concerned, its content is not there; *both* is unable to reach beyond the at-issue dimension, even when circumstances would seem to favor that.

The *both* test is useful for detecting that a given meaning is not in the at-issue dimension, but it doesn't tell us much about what kind of non-at-issue meaning we have on our hands. For example, presuppositions are also invisible to *both*; in (27), the predicate *stop* arguably presupposes that Ali ran the marathon before, so we have two propositions expressed, and yet inserting *both* results in ungrammaticality:

- (27) Ali (*both) ran the marathon again.

However, there are morphosyntactic phenomena that allow us to diagnose CI and expressive content in particular. Potts et al. (2007) report on a number of such phenomena, in English, Hindi, and Japanese, and they reference related cases in Arabic (Aoun & Choueiri 2000) and German

(Schwarz 2008). There isn't space to review all that evidence here, but it is worth looking at one case in detail, to convey a sense for how the arguments work. The example builds on Pullum & Rawlins' (2007) findings for the matching construction *X or no X* (e.g., *War or no war*).

The English *as AP as AP can be* construction, illustrated in (28) with examples found using Google, requires matching, in some sense, between the two APs:

- (28) a. as sure as sure can be [G]
 b. as gun nut as gun nut can be [G]
 c. as washed up as washed up can be [G]
 d. as average and vanilla as average and vanilla can be [G]

If the two APs don't match, the result is often ungrammatical:

- (29) a. *I'm as sure as certain can be.
 b. *I'm as sure as absolutely sure can be.

This might lead one to conclude that the two APs need to be string-identical. However, examples like (30) show that this is incorrect:

- (30) their society is as secular and religiously neutral as neutral and secular can be [G]

Here, the APs are *secular and religiously neutral* and *neutral and secular*, which obviously do not match. Once we sort out the ellipsis and arrive at a meaning for these phrases, though, we find that they match in their at-issue meanings. This seems, in fact, to be the right level at which to state the matching requirement: the construction demands identity of at-issue content. This matching requirement encompasses string-identity cases like (28), it properly rules out mismatches like (29), and it leaves enough leeway for (30).

It is important to emphasize, as part of this generalization, that we are restricting attention to *at-issue* content. Mismatches arising from the expressive dimension do not result in ungrammaticality:

- (31) a. I'm as sure as fucking sure can be.
 b. I'm as fucking sure as sure can be.
 c. He's as fucking crazy as motherfucking crazy can be.

Let φ be the meaning contribution of *fucking* in expressive uses like (31), and let $\llbracket \textit{sure} \rrbracket$ be the at-issue content of *sure*. The multidimensional theory of expressives allows us to say that *sure* and *fucking sure* denote $\llbracket \textit{sure} \rrbracket$ and $\langle \llbracket \textit{sure} \rrbracket, \varphi \rangle$, respectively, which match in the relevant semantic sense.

Expressives are unique among modifiers in creating a permissible imbalance of this sort. Even emotive items like *absolutely* have at-issue content that violates the matching requirement. Thus, the correct generalization about the form of the *as AP as AP can be* construction crucially depends on a distinct expressive dimension.

This multidimensionality is the key to understanding the famous infixing properties of expressives as well (McCarthy 1982):

- (32) a. o-fucking-kay, fan-friggin-tastic
 b. *o-surely-kay, *fan-stunning-tastic

The infixable expressive cannot possibly combine with, or modify, its syntactic sister, which seems not even to be morphemic. Rather, the expressive operates on a more general level, contributing something about the speaker's emotional state at the time of utterance. Even very emotive at-issue modifiers do not achieve the required independence, as we see in (32b).

2.4 Summary of findings

We've now seen a variety of different pieces of evidence that a single constituent can simultaneously contribute multiple independent meanings. It is worth pausing to recap before moving to the pragmatic interactions.

At the discourse level (section 2.1), we saw speakers responding to individual parts of these multifaceted meanings. Some meanings in secondary dimensions seem less accessible, in this sense, than others. However, we were able to identify techniques (falling broadly under the rubric of 'Hey, wait a minute!' responses) that isolate even these.

In semantic composition (section 2.2), we leaned on the presupposition holes and plugs to understand how various meanings project, i.e., how they are, or are not, semantically modified by the operators that embed them syntactically.

The picture was again one of complex variability. All the items we looked at routinely project out of presupposition hole environments. Presupposition plugs evince more complex behavior, and they are difficult to separate from more discourse-oriented facts concerning perspective.

The morphosyntax is also revealing of the multidimensional semantic foundation (section 2.3). There, we were able to correlate judgments about grammaticality with semantic generalizations that hinge on being able to have more than one dimension of meaning. This evidence is reassuring, since the semantic and pragmatic facts of section 2.2 can be rather subtle and variable.

I turn now to studying how the various dimensions interact to produce rich, coherent pragmatic interpretations.

3 Pragmatic enrichment

All the secondary meanings that we've seen so far trace to specific lexical items and constructions. This is not an accident; the 'conventional' part of 'conventional implicature' captures the arbitrary, encoded source of these meanings, contrasting them with those that derive from pragmatic interactions (article 103 *Implicature*). Nonetheless, there is an important pragmatic angle on both CIs and expressives; it is arguably the case that the value of having multifaceted meanings is that they deliver richer, more nuanced messages than one could obtain with just a single dimension.

The goal of the present section is to identify and explore some of these pragmatic interactions. We have already seen that individual CI and expressive items differ markedly in their morphosyntax and their semantics, making it hard (or unsatisfying) to study them en masse. The variability is even greater at the pragmatic level. Thus, I do not attempt to provide sweeping generalizations. Instead, I focus on the two items that I opened with and that play a significant role in the preceding discussion: nominal appositives and the expressive *damn*. I take each in turn, beginning with appositives (section 3.1), then applying those lessons to the trickier case of *damn* (section 3.2).

3.1 Nominal appositives

Appositives of the sort considered here are prototypically used to *comment* upon the main-clause's content (Asher 2000; Huddleston & Pullum 2002; Potts 2005). They are excellent vehicles for side remarks that would badly interrupt the narrative if expressed as free-standing sentences. For example, (33a) is more natural than (33b) because the digression into the speaker's relationship with Edna intrudes less when expressed appositively than when given the prominence of a free-standing sentence.

- (33) a. I had lunch with Edna, whom I've known since high school. She now works for a design firm.
 b. I had lunch with Edna. I've known her since high school. She now works for a design firm.

Similarly, in (34), from the Penn Treebank (Marcus et al. 1999), the appositive essentially just satisfies the presupposition of the antecedent verb phrase headed by *cool off*.

- (34) Recovery could be hampered if Britain's major trading partners in Europe, which are enjoying robust economic activity, cool off as expected in late 1990 and 1991.

However, appositives are vital to the overall import of the clauses to which they affix, often in ways that go beyond commentary (Ifantidou-Trouki 1993; Blakemore 1996). The most telling indication of their potential is that that they can answer the immediate question under discussion, pushing the at-issue content into the background, as in (35), from Larry King Live, June 10, 2003:

- (35) King: Maybe the Harry Potter line was — Michael Beschloss, why are people rushing to buy this book?

Beschloss: I think it's exactly what I was sort of saying earlier, which is they watched her for all those years and wondered what was in her mind and they want to get some idea of what it was.

Can we reconcile the commentary insight with the observation that appositives are often central

to the flow of the discourse? I think we can. The crucial insight lies in the fact that natural language sentences are, quite generally, wildly underspecified representations of the meanings that they convey in context (Bach 1994; Levinson 2000; articles 12 *Semantic underspecification* and 123 *Computational linguistics*). Appositives allow speakers to strategically resolve this underspecification and thus increase the overall communicative value of the sentences that contain them.

Most lexical items have context-dependent aspects of their meanings (article 100 *Context dependency*), and appositives often serve to help resolve this. For example, the primary function of the appositive in (36) is to provide information about the scale that is relevant for understanding *even* in this situation.

- (36) Even Gary Kasparov, a world chess champion for 15 years, lost to Deep Blue.

Because the appositive can be niched (Ross 1973) right next to *even Gary Kasparov*, it is superior to a sequence of sentences when it comes to resolving the context dependency. This is also likely a primary function of the appositive in (33a), which helps the listener to contextualize the proper name *Edna*. Indeed, the primary function of definite nominal appositives like the ones in (37), taken from the CNN show *Lou Dobbs Tonight* (July 14 and February 15, 2008) is to help the listener fix the referents of the proper name they adjoin to (Elbourne 2005:§3.3; Potts 2005:§4.5.5):

- (37) a. OTS, the regulator, was asleep at the switch and allowed things to happen without restraint.
 b. Bush, the elder, was not wholly committed [...]

Even if a sentence's context-dependent features are resolved, an appositive can still play an essential role, by helping the listener to understand why that particular content is being offered at all. My simple example (1b), repeated here, is a good illustration:

- (38) Charlie is at the door.

Even if we know exactly what proposition this expresses, we might still be at a loss to understand

why it was uttered. Inserting an appositive can help reveal the speaker's intentions:

- (39) a. Charlie, a pizza delivery person, is at the door!
 b. Charlie, an infamous axe murderer, is at the door!

Thinking of discourse as structured by abstract *questions under discussion* or *decision problems* (Roberts 1996; Büring 1999; van Rooy 2004) is revealing of the differences between (38) and (39). With focal prominence on the subject, (38) simply answers the question of who is at the door. The speaker might have richer issues in mind, but whether or not his audience detects this is left to purely pragmatic inferences. In contrast, (39a) and (39b), which naturally make the subject prominent, effectively force enriched interpretations. The question (or decision problem) they address is not merely who is at the door, but rather also, What should we *do* in light of that fact?

Many appositive elements function in similar ways in discourse, including appositive relatives, As-parenteticals (*Ed, as we now know, is a spy*), and speech-act modifiers like *frankly*. While more could be said, both about the ways in which appositives differ from separate main clauses and the ways in which they interact with the at-issue content, I think the above suffices to make the point that, despite separation at the compositional level, at-issue and appositive content interact to flesh out underspecified meanings and enrich them.

3.2 The taboo intensive *damn*

The meanings contributed by expressive elements like *damn* are, of course, quite different from those of appositives, but both feed pragmatic enrichment in similar ways. The goal of this section is to begin to build a refined pragmatics for *damn* that relates it, in an abstract sense, to apposition.

One is inclined to start by asking what *damn* means and then build a pragmatic theory from that foundation. However, asking for a traditional semantics here seems to miss the point; the interest of this item lies in its *use conditions*, in Kaplan's (1999) terms (as summarized near the start

of section 2). We want to get a grip on the expectations that *damn* creates in the hearer, and the ways in which a speaker can exploit those expectations when talking.

So, what expectations does *damn* set up? In answering this question, we are apt to think first of negative uses — those that convey agitation, frustration, and the like. These are essential uses of this item, but they tell only part of the story, as we see when we look to naturally occurring cases. The examples in (40)–(41) are drawn from one of the large collections of online product reviews that Constant et al. (2008) use to study a wide variety of expressives. These examples range from the truly negative, as in (40), to the exclaimatively positive, as in (41).

- (40) a. About time someone took a wrecking ball to the whole damn rotten structure.
 b. Trouble is Steyn doesn't know a damn thing about Americans.
- (41) a. I couldn't put the damn thing down.
 b. Chelsea is delightful and so damn funny.
 c. I've read about 3/4th of it . . . and I just can't get the damn thing done.

What unifies these uses is *heightened emotion*. Constant et al. (2008) quantify this perspective by studying the distribution of *damn* and other expressives in the corpus from which the above are drawn, which consists of 53,557 reviews by over 40,000 authors, for a total of about 8.1 million words. Each review in the collection is tagged with a star-rating, one through five stars. Authors writing one or five star reviews are in more heightened emotional states than authors writing reviews in the middle of the rating scale. This emotionality is reflected in their language, which is rich in intensive, exclamatives, and the like. Constant et al. (2008) argue, on the basis of this language and our intuitions about what it conveys, that the star-ratings provide a rough but nonetheless useful approximation of the speaker's emotional state: the extreme ratings (one and five stars) correlate with heightened emotion, and the

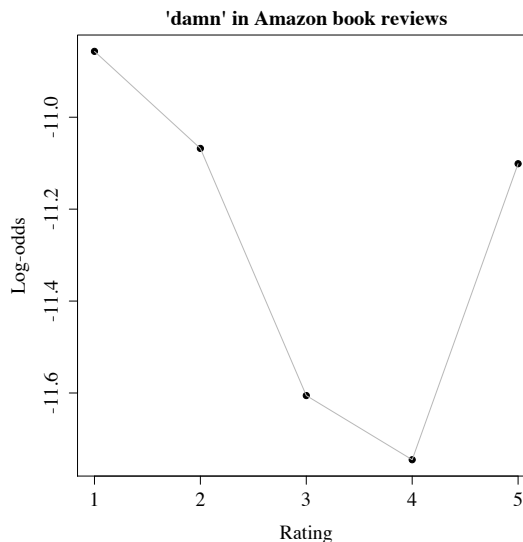


Figure 1: The frequency distribution of the taboo intensive *damn* in a large corpus of online product reviews with star ratings attached to them. The empirical points are black. The lines are included to bring out the U shape. The distribution reveals that *damn* is used primarily in the extreme rating categories, where the authors either loved or loathed the product they are writing about.

middle ratings (two to four stars) correlate with more measured outlooks.

The distribution of *damn* in this collection is depicted, on a log-odds scale, in figure 1. The empirical points are the black dots; for each rating category R , we calculate

$$(42) \quad \ln \left(\frac{\text{count}(\textit{damn}, R)}{\text{count}(R) - \text{count}(\textit{damn}, R)} \right)$$

where \ln is the natural logarithm, $\text{count}(\textit{damn}, R)$ is the number of occurrences of *damn* in reviews in category R , and $\text{count}(R)$ is the total number of words in reviews in category R . This calculation is similar to a basic frequency distribution obtained by calculating $\text{count}(\textit{damn}, R) / \text{count}(R)$, but it affords a more powerful and reliable statistical perspective on these distributions.

The distribution is noteworthy for its U shape with respect to the rating categories: *damn* is significantly more frequent at the extreme ends of the rating scale than it is in the middle. Indeed, it

is about 66% more likely to appear in a five-star review than in a three-star review. Thus, it is an excellent indicator of an extreme review and, in turn, of heightened emotion. In contrast, by itself, it is a poor signal of the polarity of that emotion: it is just 27% more likely to appear in a one-star review than in a five-star one. This is the same profile that Constant et al. (2008) report for intensives like *absolutely* (Beaver & Clark 2008) and exclamatives like *wow*. Setting the mildly taboo qualities of *damn* aside, we can say that it is, like intensives and exclamatives, a reliable indicator that the speaker is in a heightened emotional state (or at least intends to create such an impression).

The frequency distribution is a rich source of information about what *damn* does to utterances containing it. The subjective/objective corpus of Pang & Lee (2004) is another piece of the puzzle. Pang & Lee classified sentences according to whether they were objective or subjective. The resulting corpus has 5,000 sentences in each of the two categories, and each has around 650,000 words in it. The corpus contains 24 occurrences of *damn*, and 23 of them occur in the subjective corpus. What's more, the single *damn* in the objective corpus is used in the context of objectively describing the subjective mental state of a character in a movie. Thus, we have suggestive evidence that *damn* correlates strongly with subjectivity, and we might even go so far as to say that it can move otherwise objective statements into a subjective realm, an ability that seems in keeping with the perspective dependence of expressives in general (Potts 2007a).

All this corpus evidence paints a rich picture of the contribution of *damn*. The associations between this word and the conceptual categories (the rating scale, the subjective/objective distinction) are representative of our linguistic experiences. As speakers, we have strong expectations that uses of *damn* will correlate with the speaker's being in a heightened emotional state (or wishing to create that impression). In turn, we use it only when we are in such a state (or wish to create that impression). The total effect of these assumptions is that *damn* is a *reliable* signal of emotionality. Knowing its use conditions, in the Kaplanian sense, largely involves being attuned to this in-

formation. As a result, whereas an utterance of (43a) might leave you unsure of how the speaker views the situation being described, (43b) creates a window into his underlying emotional state at the time of utterance.

- (43) a. Sam bought that bike.
b. Sam bought that damn bike.

Even (43b) is indeterminate, though. I noted above that *damn* is about as frequent in positive reviews as it is in negative ones. As Constant et al. (2008) observe, this means that we look to the context to understand the polarity of the emotionality it signals. If Sam's new bike is going to ensure that he beats us in every race, then you'll perceive a resigned solidarity in my utterance of (43b). In contrast, if I'm simply eager to try out his fancy new ride, then exuberance will shine through.

The immediate linguistic environment often provides the strongest indicators of what a given expressive utterance means. Looking back at (40)–(41), we see that the predicates surrounding *damn* guide the emotional polarity of *damn* itself. Predicates like *rotten* tend to take us to negative parts of the emotional spectrum; predicates like *funny* tend to take us to positive parts of it. When Constant et al. (2008) restrict attention to tokens of *damn* that immediately precede positive adjectives, the U shape seen in figure 1 becomes a pronounced Reverse L, i.e., a dramatic bias for positivity emerges.

Thus, the expressive imbues the at-issue content with new meaning and importance, and the at-issue content clarifies the meaning of the expressive. The two dimensions shape each other.

3.3 Unifying themes

Appositives and expressives are very different in form and content, and this is reflected in the ways in which they contribute to utterance interpretation. However, both often play the role of contextualizing the at-issue content that surrounds them. Appositives resolve underspecification and enhance relevance; expressives color with subjectivity and emotionality.

4 Conclusion

This article builds a case for a theory of meaning in which individual words and phrases denote tuples of independent meanings. Section 2 describes a framework for modeling such meanings and goes on to present evidence that the effects of multidimensionality are felt in discourse (section 2.1), in semantic composition (section 2.2), and in morphosyntax (section 2.3).

Appositives and expressives provide the primary empirical evidence in this article, with various connectives and particles playing supporting roles. Though multidimensionality arguably unites these morphosyntactically disparate items, we should take care not to overstate the unity; many differences emerge, suggesting that we need to study each item on its own terms, with the known diagnostics and generalizations guiding investigation rather pressuring us to pack phenomena into rigid categories.

In section 3, the emphasis shifts from semantic denotations to the role that conventional implicatures and expressives play in pragmatic inference. The case studies are appositives and the taboo intensive *damn*. These investigations highlight a few ways in which secondary dimensions of meaning can play primary roles in shaping the overall message of an utterance.

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